

ABSTRACT

A structure, apparatus and method for deterring the temperature of an active region in semiconductor, particularly a FET is provided. A pair FETs are arranged on a silicon island a prescribed distance from one another where the silicon island is surrounded by a thermal insulator. One FET is heated by a current driven therethrough. The other FET functions as a temperature sensor by having a change in an electrical characteristic versus temperature monitored. By arranging multiple pairs of FETs separated by different known distances, the temperature of the active region of one of the FETs may be determined during operation at various driving currents.